



COUNTY OF LOS ANGELES

DEPARTMENT OF PUBLIC WORKS

"To Enrich Lives Through Effective and Caring Service"

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IN REPLY PLEASE

REFER TO FILE: **WM-9**

May 5, 2005

The Honorable Board of Supervisors
County of Los Angeles
383 Kenneth Hahn Hall of Administration
500 West Temple Street
Los Angeles, CA 90012

Dear Supervisors:

**SUBSEQUENT RESEARCH IMPLEMENTATION AGREEMENT TO
BUILD A REGIONALLY CONSISTENT AND INTEGRATED
FRESHWATER STREAM BIOASSESSMENT MONITORING PROGRAM
ALL SUPERVISORIAL DISTRICTS
3 VOTES**

IT IS RECOMMENDED THAT YOUR BOARD:

Approve and instruct the Chair to sign the enclosed agreement between the County of Los Angeles acting on behalf of the Los Angeles County Flood Control District; other State and local public agencies; and the Southern California Coastal Water Research Project (SCCWRP), a joint powers agency, for the District to contribute \$25,000 from funds available in the Fiscal Year 2004-05 Flood Control District Fund for a two-year local streams bioassessment monitoring program.

PURPOSE/JUSTIFICATION OF RECOMMENDED ACTION

The County, on behalf of the Flood Control District, has been conducting bioassessment monitoring of local streams for the last two years as part of its current National Pollutant Discharge Elimination System municipal stormwater permit. Although this biological method of judging stream health has been gaining popularity in Southern California in recent years, there has been no consistent protocol and no regional standard by which to compare the findings. To address these shortcomings, the Southern California

Stormwater Monitoring Coalition and its participants from various counties, including the County of Los Angeles, established a goal in December 2002 of building a regionally consistent bioassessment monitoring program.

The purpose of this project will be: 1) develop standardized methods of bioassessment sampling and analysis, 2) calibrate and validate a local standard to which results may be compared, and 3) design and implement an integrated and coordinated regional bioassessment monitoring program. The total cost of the proposed project is \$280,000. SCCWRP has agreed to manage the bioassessment monitoring program and to collaborate with the California Department of Fish and Game in the work. The scope of the work to be performed is enclosed as Exhibit A to the agreement.

Under the terms of the agreement, funding for the bioassessment monitoring program will be provided to SCCWRP and will be shared by the County (\$25,000) and other participants in the agreement, namely: the County of Orange (\$25,000), the San Bernardino County Flood Control District (\$25,000), the Riverside County Flood Control and Water Conservation District (\$25,000), the Ventura County Watershed Protection District (\$25,000), and the County of San Diego (\$7,500). The Sanitation Districts of Los Angeles County and the State Water Resources Control Board will contribute \$7,500 and \$140,000, respectively, toward funding of the bioassessment monitoring program through separate agreements with SCCWRP.

Implementation of Strategic Plan Goals

This action meets the County Strategic Plan Goal of Organizational Effectiveness by allowing Public Works to participate in a collaborative effort to complete the monitoring program. This action also meets the County Strategic Plan Goal of Fiscal Responsibility by allowing Public Works to manage resources in a more efficient manner through cost sharing with other agencies.

FISCAL IMPACT/FINANCING

There will be no impact to the County's General Fund. Execution of the agreement will result in a cash contribution of \$25,000 to SCCWRP for the District's share of the cost to fund the bioassessment monitoring program. Funds for this contribution are available in the Fiscal Year 2004-05 Flood Control District Fund.

FACTS AND PROVISIONS/LEGAL REQUIREMENTS

All parties are working on approving the agreement simultaneously. The agreement has been reviewed and approved as to form by County Counsel.

The Honorable Board of Supervisors
May 5, 2005
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ENVIRONMENTAL DOCUMENTATION

Approval of the agreement is exempt from the California Environmental Quality Act (CEQA) because it can be seen with certainty that there is no possibility that the activity may have a significant effect on the environment in accordance with Section 15061(b)(3) of the State CEQA guidelines.

CONTRACTING PROCESS

No contracting of services is required of the District.

IMPACT ON CURRENT SERVICES (OR PROJECTS)

Approval of the agreement will have a beneficial impact on the District's efforts to determine the biological health of local streams and will have no adverse impact on the current level of services provided by the District or by the County.

CONCLUSION

Please return 3 copies of this letter and 20 approved originals of the agreement to Public Works. Once all the parties have executed the agreement, we will send an original of all signature pages to the Executive Office to complete the adopted package.

Respectfully submitted,

DONALD L. WOLFE
Acting Director of Public Works

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Enc.

cc: Chief Administrative Office
County Counsel

Exhibit A

Building A Regionally Consistent and Integrated Freshwater Stream Bioassessment Monitoring Program

INTRODUCTION

Assessment of freshwater biological communities represents a potentially powerful tool for evaluating the effects of discharges in southern California creeks and streams. Bioassessments integrate the effects of multiple stressors, including chemical pollutants and physical alterations in receiving waters. The value of biological assessments is that they are closer to many of the defined beneficial uses of receiving waters (i.e. aquatic life, warm water habitat, cold water habitat) than chemically-derived water quality objectives.

Bioassessments have been gaining popularity as a monitoring tool in southern California over the last decade. Perpetuated from fish bioassessments in the Pacific Northwest (Karr 1981), bioassessments of benthic invertebrates are part of regular monitoring programs in Ohio, Kansas, Illinois, Florida, Maryland, and Hawaii, amongst others (Yoder and Rankin 1998). In our region, the California Department of Fish and Game (CDFG) has developed the California Bioassessment Protocol (CBP). The protocol outlines the steps necessary for conducting rapid bioassessments of benthic invertebrates in streams and rivers statewide.

One of the main drawbacks of using rapid bioassessments in southern California has been the lack of biological thresholds, or biocriteria, for evaluating benthic community data. The lack of an assessment tool for bioassessments has hindered most managers because there has been no scientifically defensible manner for discerning if a site is "good" or "bad". Karr *et al.* (1986) originally developed an index of biological integrity (IBI) for fish communities in the Pacific Northwest, but IBIs for benthic communities have been developed in Tennessee Valley (Kerans and Karr 1994), Ohio (Ohio Environmental Protection Agency 1987), Florida (Barbour *et al.* 1996) and Maryland (Stribling *et al.* 1998). IBIs generally create rank sums of community parameter metrics such as abundance, species composition, and/or diversity and integrates these complex community parameters into a single number, typically from 1 to 100 with cutpoints for various levels of impact. Until recently, no IBI has existed in southern California. However, the San Diego Regional Water Quality Control Board (RWQCB) has worked with the CDFG to develop an index specific to San Diego (Ode *et al.* 2002). The suitability of the San Diego IBI for extrapolation throughout southern California is unknown.

Although the use of bioassessments is increasing and a sampling protocol has been released by CDFG, there is a wide range of application and experience among monitoring and regulatory agencies around southern California (Table 1). There are at least three agencies that have never conducted rapid bioassessments, but are preparing to undertake them as a result of NPDES permit conditions. Another three agencies have been conducting bioassessments for a year, or less, and are just beginning to develop programs. All three of these agencies utilize subcontractors to conduct their monitoring rather than using in-house staff. Only the CDFG has been conducting bioassessments in southern California for more than two years; they have run

several programs including EPA's Western Environmental Monitoring and Assessment Project (EMAP), the San Diego RWQCB regional bioassessment program, and the Statewide Ambient Monitoring Program (SWAMP). CDFG has developed a laboratory for sampling and taxonomic identification of freshwater benthic invertebrates, and is continually working towards methods standardization, quality assurance, and biocriteria development throughout the state. Other than CDFG, none of the agencies tasked with bioassessment monitoring regularly interact with one another nor have they evaluated comparability among one another's programs.

Table 1. Status¹ of freshwater bioassessment effort in southern California.

Agency	Currently Conducting Bioassessments?	How long?	Notes
Ventura County WPD	Yes	2 years	In stormwater NPDES permit
County of Los Angeles	No		Stormwater permit stipulates development of biological thresholds
Sanitation Districts of Los Angeles County	Yes	6 months	Part of SEP, not an ongoing program yet
Riverside County FC&WCD	No		Stormwater permit stipulates development of biological thresholds
County of Orange	Yes	1 month	In San Diego Permit. Santa Ana stormwater permit stipulates development of biological thresholds
County of San Diego	Yes	1 year	In stormwater NPDES permit
San Bernardino County Flood Control District	No		In stormwater NPDES permit
CDFG	Yes	6 years	Used for developing San Diego IBI
EPA Western EMAP	Yes	4 years	Distributed among five counties in So Cal
RWQCBs	Yes	2 years	Statewide Ambient Monitoring Program (SWAMP) varies among RWQCBs and years
US Forest Service	No		Just getting contract started to CDFG

¹ based on the Stormwater Monitoring Coalition bioassessment workshop, 12/12/02.

A workshop, sponsored by the southern California Stormwater Monitoring Coalition, was held in December 2002 for all of the agencies currently conducting bioassessment monitoring in the southern California Region. The goal of the workshop was two-fold: 1) information transfer among all interested parties; and 2) develop an approach for building a regionally consistent bioassessment program. This document presents the workshop findings, and provides a blueprint for implementing the recommended strategy developed by the workshop participants. This

blueprint was designed by the CDFG and the Southern California Coastal Water Research Project (SCCWRP).

GENERAL APPROACH

The general approach for building a regionally consistent bioassessment monitoring program has three phases. These phases include: 1) methods standardization; 2) calibrating and validating a regional assessment tool; and 3) designing and implementing an integrated, coordinated regional monitoring program. The first phase focuses on creating a monitoring infrastructure so that multiple agencies are properly trained, data are collected in comparable manners, and data can be efficiently shared. The second phase focuses on developing an assessment tool that is robust enough to be used by all agencies across the region. This will enable a consistent approach for evaluating the status of freshwater biological communities and provide the answers regarding community impacts to managers in meaningful and understandable terms. The third phase focuses on creating a study design that most efficiently answers specific questions of interest at large regional scales. Addressing some questions at regional scales can provide cost efficiency for addressing reference condition, cumulative impacts, and when nested within a local sampling design, provides unparalleled information for providing context to local monitoring data.

Methods Standardization

The goal of this phase is to develop regional standard operating procedures (SOPs) for field, laboratory, and information management activities. These SOPs will be particularly useful in a regional monitoring program, where comparability among sampling, laboratory, and data management is necessary for commingling data sets. However, the SOPs will also be valuable for ongoing NPDES monitoring activities conducted by staff or contractors. The SOPs provide agencies a mechanism to ensure comparability and quality from year-to-year, as staff or contractor turnover occur. Fortunately, much of the foundation for this work in freshwater has been accomplished thanks to the CDFG Professional Rapid Bioassessment Protocol (Harrington 1999) reducing the effort and cost of this phase. Unfortunately, little of this work has been done in estuaries and some methods development will be required before standard methods can be recommended. The product of this phase will be creation of SOPs specific for southern California.

Training and QA/QC

We propose a three-step program to provide training and evaluate quality assurance/quality control (QA/QC) to ensure consistency and comparability in field sampling and laboratory practices. The first step is designed for agencies and individuals unfamiliar with rapid bioassessments. The Sustainable Land Stewardship Institute (SLSI) has a three-day course that is specifically designed to introduce the concept of rapid bioassessments including a short primer on biology and ecology, field sampling techniques, laboratory activities, and data evaluation. The course has both classroom and hands-on components. This is the same course used to train scientists as part of the State Wide Ambient Monitoring Program (SWAMP) supported by the California State Water Resources Control Board.

The second step is designed for agency staff and/or consultants that are actively involved in monitoring to ensure the quality and consistency among programs. Since there is no certification program for field or laboratory activities, this step will provide a formal QA/QC check. The QA/QC for field sampling activities will be verified through the use of in-field audits. The QA/QC for laboratory activities will be verified through the submission of analyzed samples to a second, highly-qualified, independent laboratory. The results from the agency/contractor will be compared to the results from the independent laboratory. Both the in-field audits and laboratory resubmission of samples will include assessments of completeness, accuracy, and precision. Once again, the CDFG has an ongoing QA/QC program, including field auditors and taxonomists that can provide the independent evaluation to quantify quality and maintain consistency. In addition, participating laboratories should become members in good standing with the California Aquatic Macroinvertebrate Laboratory Network (CAMLnet), a trade association of freshwater taxonomists, in order to maintain an ongoing commitment to quality.

The third step is designed to extend the capabilities of some agencies that are actively involved in bioassessment monitoring. While benthic macroinvertebrates have been well-suited to the current rapid bioassessment program, there are other indicators that may provide additional valuable information on biological responses and community impacts. These additional indicators include physical habitat parameters, attached algae, vascular plants, and fishes. These additional indicators are already considered routine sampling elements for EMAP and the SLSI would help train agencies on the proper sampling techniques for these important parameters.

Information Management

Unlike the field and laboratory activities where the SLSI and CDFG has expended tremendous effort to ensure quality and consistency, there is no program that currently exists for standardizing information management (IM) for freshwater bioassessments. Therefore, this element will borrow the IM from the southern California regional marine monitoring program by devising data transfer protocols (DTP). The DTP are a powerful way to share data among agencies because it does not require any specific software or hardware. Rather, the participating agencies focus on defining the data types that will be shared, then create a data structure for transferring data from one agency to another in a simple common format such as ASCII comma-delimited files. In this way, agencies have the flexibility to store data in their preferred software and format, only having to output data sets in a common structure when delivering them to another agency. Agencies receiving data will know exactly what data types they are receiving, and in what structure, enabling easy appending of data sets or importing into their in-house IM system. The DTP will also enable local agencies to share data with other larger scale programs such as SWAMP or EMAP. Development of this IM system will require several meetings by participating data managers to define a DTP structure, minimum data requirements (i.e. data fields), and selected nominal values (i.e. drop down lists). The SOP for IM will consist of the database structure and data entry templates.

Estuarine Sampling

One of the next steps for standardizing bioassessments is to develop effective techniques for new habitats of interest to watershed managers. One such habitat are estuaries. Estuaries represent an important ecological component of the watershed. Many fish species, including the

California halibut, use estuaries as nursery grounds for spawning. Estuaries are important for many bird species including some rare and endangered species such as the California least tern or light-footed Clapper Rail. Many estuaries in southern California are important layover locations along the Pacific Flyway, the major migratory route for most shorebirds along the west coast of North America. Estuaries, however, are also in a vulnerable location within watersheds. Situated at the bottom of the watershed, estuaries accumulate the discharges from all of the anthropogenic activities upstream. Many estuaries in southern California are closed to the ocean during the summer and fall, which potentially exacerbates the risk because the accumulation of watershed discharges cannot dissipate as a result of mixing and dilution.

Despite their relatively large ecological importance and potential risk from watershed discharges, southern California estuaries are traditionally not well monitored. Except for very high profile estuaries like Upper Newport Bay, most of southern California's 18 estuaries have not been regularly monitored. As such, there have been few investigations into the best monitoring techniques for these brackish water habitats. For example, the Bight'03 regional monitoring program uses marine-based techniques developed for near coastal waters. These techniques are limited in estuaries, however, since they often require larger-sized vessels that are unable to navigate in these shallow waterways. In contrast, most freshwater bioassessment programs use wadeable techniques, which limit their sampleability to only the shallowest of estuary ecotones and may miss the deeper tidal channels.

The goal of this project element is to test alternative sampling methodologies side-by-side to assess the most effective and efficient sampling techniques. The techniques will include at least three different gear types consisting of sediment grab samplers, hand held coring devices, and dredge samplers. Each of the sampling gear types will be tested both in healthy and impacted habitats. Gear types will also be tested in a variety of estuary types including relatively modified and unmodified estuaries (i.e. San Gabriel River and Penasquitos Lagoon). The different gear types will be evaluated using criteria that quantifies sampling consistency, ability to detect biological differences among habitat types, and sampling cost-efficiency. The SOP for estuarine sampling will include recommended gear types for specific applications and instructions on how to use each gear type.

Products: Field, Laboratory, and Information Management SOPs. Results of the estuarine sampling efficiency testing.

Evaluate, Verify and Improve Existing Biological Thresholds in Southern California

The CDFG has developed a preliminary IBI that is applicable in the San Diego Region. The goal of this phase is to extend the San Diego Region IBI to the rest of southern California so that, when completed, a validated IBI will be available for all southern California streams. The product will be a report, or peer-reviewed manuscript, that describes the accuracy, precision, and bias of a region-wide IBI for freshwater macroinvertebrates.

Evaluating, verifying, and improving the San Diego IBI for remaining southern California streams will require three steps. These steps include gathering existing data sets throughout the region of interest, IM to ensure completeness and taxonomic consistency, and statistical analysis. The CDFG has several data sets that are amenable to this phase such as EPA's Western EMAP, the California SWAMP, and several local projects in San Diego, Los Angeles, Orange, Riverside, and Ventura Counties. No new data collection is proposed at this time. Once compiled, a thorough check of the database will be required for several factors including completeness, accuracy, and taxonomic consistency. This will also provide an opportunity to evaluate the DTP described in the previous phase.

Statistical analysis of existing data is necessary to extend the San Diego IBI. Some of these analyses will include a definition of the different biological communities found throughout southern California, identification of the physical factors that affect biological communities, identification of the stressors that affect biological communities (where data are available), and examine the response pattern of the San Diego IBI in these additional locations. In addition, the metrics used for developing the San Diego IBI will be evaluated, as well as additional metrics, to determine if the response pattern remains the same. Other approaches for defining human impact may also be examined. Finally, data analysis will attempt to refine study design techniques, if necessary, including identifying sampling frames and index periods, temporal and spatial sampling intensity, replication, and the significance of existing and potential new habitat quality measures. This element will become particularly important if we begin addressing some newer parameters such as physical habitat, attached algae, or fish community information collected through EMAP. The data analyses will also identify areas and habitats where data gaps exist if future data collection efforts are undertaken.

Product: Regional database, manuscript documenting IBI evaluation, development of new thresholds for additional indicators.

Study Design and Workplan for Integrated Coordinated Regional Monitoring

The goal of this phase is to design a regional monitoring program that is integrated with local monitoring designs and is coordinated among the different local monitoring agencies. In this way, a cost-efficient program can be instituted that maximizes local information and still provides the large-scale context valuable for interpreting local results. In addition, coordinating with other monitoring agencies saves resources since a separate, stand-alone program can be avoided. When completed, this phase incorporates both the methods standardization and assessment tool development conducted in the previous two phases of this project. The product from this phase will be a regional monitoring workplan suitable for immediate implementation.

This phase will require two primary steps. The first step will be to develop consensus on the specific monitoring questions of interest to address in the regional study. All of the participating agencies will be able to provide input to create the monitoring question(s) and these will be approved by all participants in a meeting format. The second step will be to create a sampling design that will answer the question(s) in the most efficient manner, and with specified levels of confidence. This will require creating geographical information system (GIS) overlays and

sampling frames, defining sampling frequency and replication, list of measurement indicators, proposed statistical analysis, and sampling and reporting schedules.

Product: Regional monitoring workplan

SCHEDULE

Proposed timeline for project phases:

Phase	Months from Project Initiation											
	2	4	6	8	10	12	14	16	18	20	22	24
Methods Standardization												
Verify SD-IBI throughout So Cal												
Design a Regional Monitoring Program												

REFERENCES

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Resources, Monitoring and Non-tidal Assessment Division. Annapolis, Maryland.
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Exhibit B

COST

Proposed cost for project phases.

Phase	CDFG	SCCWRP	Total
Methods Standardization	75,000	65,000	140,000
Verify SD-IBI throughout So Cal	50,000	60,000	110,000
Design a Regional Monitoring Program	15,000	15,000	30,000
Total	140,000	140,000	280,000

*MONETARY DISTRIBUTION AMONG MUNICIPAL PARTIES**

County of Orange	\$ 25,000.00
County of Los Angeles	\$ 25,000.00
San Bernardino County Flood Control District	\$ 25,000.00
Riverside County Flood Control and Water Conservation District	\$ 25,000.00
Ventura County Watershed Protection District	\$ 25,000.00
County of San Diego	\$ 7,500.00
Total	\$ 132,500.00

* \$140,000 to be contributed by the State Water Resources Control Board through separate agreement with SCCWRP. \$7,500 to be contributed by the Sanitation Districts of Los Angeles County through separate agreement with SCCWRP.

SUBSEQUENT RESEARCH IMPLEMENTATION AGREEMENT TO BUILD A REGIONALLY CONSISTENT AND
INTEGRATED FRESHWATER STREAM BIOASSESSMENT MONITORING PROGRAM

THIS AGREEMENT, for purposes of identification numbered D03-026, is made and entered into this ____ day of _____, 2005, by and between the County of Orange, the County of Los Angeles, the County of San Diego, the Ventura County Watershed Protection District, the Riverside County Flood Control and Water Conservation District, the San Bernardino County Flood Control District (collectively the MUNICIPAL PARTIES); the California Regional Water Quality Control Board, Los Angeles Region, the California Regional Water Quality Control Board, Santa Ana Region, the California Regional Water Quality Control Board, San Diego Region; and the Southern California Coastal Water Research Project (SCCWRP). These entities are hereinafter sometimes jointly referred to as the "PARTIES" and individually as "PARTY".

WITNESSETH

WHEREAS, Section 402 of the Clean Water Act (33 U.S.C.A. 1342(p)) and the National Pollutant Discharge Elimination System (NPDES) regulations implementing Section 402 contain requirements for applications for municipal and industrial stormwater discharge permits; and

WHEREAS, the NPDES permit regulations require municipalities to control pollutants from stormwater discharges to the maximum extent practicable into waters of the United States under conditions applicable to municipalities prescribed in the relevant NPDES permits; and,

WHEREAS, Chapter 5.5, commencing with Section 13370, of the Porter-Cologne Water Quality Control Act (Division 7, commencing with Section 13000 of the California Water Code) provides for the regulation of discharges subject to the Clean Water Act under waste discharge requirements issued by the California Regional Water Quality Control Boards, or the State Water Resources Control Board, in lieu of NPDES permits issued by the United States Environmental Protection Agency; and

WHEREAS, the California Regional Water Quality Control Boards for the Los Angeles, Santa Ana and San Diego regions have issued waste discharge requirements

1 implementing NPDES permit regulations for discharges of stormwater in their respective
2 portions of the counties of Los Angeles, Orange, Riverside, San Bernardino, San Diego
3 and Ventura; and

4 WHEREAS, the counties, cities, and flood control districts in these Southern
5 California counties have been identified as co-permittees; and,

6 WHEREAS, the MUNICIPAL PARTIES to this AGREEMENT are acting on behalf of the
7 municipal co-permittees with respect to their NPDES stormwater requirements for each
8 county pursuant to local agreements; and

9 WHEREAS, all the NPDES stormwater requirements issued to the MUNICIPAL PARTIES
10 include extensive monitoring; and

11 WHEREAS, many of the scientific and technical tools for such stormwater
12 monitoring cooperation are inadequately developed; and

13 WHEREAS, the SCCWRP, a Joint Powers Authority, was established in 1969 and is
14 governed by the City of Los Angeles, the Sanitation Districts of Los Angeles County,
15 the City of San Diego, the Orange County Sanitation District, the California Regional
16 Water Quality Control Boards for the Los Angeles, San Diego and Santa Ana regions, the
17 State Water Resources Control Board and the United States Environmental Protection
18 Agency, Region IX; and

19 WHEREAS, the mission of the SCCWRP is to contribute to the scientific
20 understanding of linkages among human activities, natural events and the health of the
21 southern California coastal environment, and whose goal is to develop, participate in
22 and coordinate programs to further this mission; and

23 WHEREAS, all of the PARTIES, through Agreement D99-072 dated February 8, 2001,
24 have agreed to collaborate for a five year period on a cooperative research/monitoring
25 program to develop the methodologies and assessment tools to more effectively
26 understand urban stormwater and non-stormwater (anthropogenic) impacts to receiving
waters and to conduct research/monitoring through Subsequent Research Implementation
Agreements between interested PARTIES; and

WHEREAS, the PARTIES, through Agreement D99-072, have agreed that some monies currently directed to NPDES compliance monitoring may be appropriately directed to support this research effort; and

WHEREAS, the development of a research agenda was identified as the first work task in creating a cooperative research/monitoring program and has been completed under the direction of SCCWRP; and

WHEREAS, designing and building a regionally consistent and integrated freshwater stream bioassessment monitoring program (hereinafter BIOASSESSMENT PROGRAM) was identified as one of the proposed cooperative projects and was identified as being of immediate importance to all the PARTIES; and

WHEREAS, considerable prior effort has been expended within San Diego County on initiating the BIOASSESSMENT PROGRAM; and

WHEREAS, SCCWRP has agreed to manage the BIOASSESSMENT PROGRAM project and collaborate with the California Department of Fish and Game in the work; and

WHEREAS, the MUNICIPAL PARTIES have agreed to fund \$132,500 of the \$280,000 cost to complete the BIOASSESSMENT PROGRAM according to the cost allocations set forth in Exhibit B, which is attached hereto and made a part hereof; and

WHEREAS, the State Water Resources Control Board through separate agreement with SCCWRP has agreed to pay \$140,000 of the cost to complete the BIOASSESSMENT PROGRAM; and

WHEREAS, the Sanitation Districts of Los Angeles County through separate agreement with SCCWRP has agreed to pay \$7,500 of the cost to complete the BIOASSESSMENT PROGRAM:

NOW, THEREFORE, IT IS AGREED by and between the PARTIES hereto as follows:

Section 1. PURPOSE. This AGREEMENT is entered into as a Subsequent Research Implementation Agreement, pursuant to Agreement D99-072, for the purpose of completing the BIOASSESSMENT PROGRAM.

Section 2. TERM. The term of this AGREEMENT shall commence upon approval and execution of this document by the last signatory to this AGREEMENT and shall continue for a period of three (3) years from that date.

1 Section 3. COMPLETION OF BIOASSESSMENT PROGRAM. SCCWRP is designated as the
2 Lead Agency for the completion of the BIOASSESSMENT PROGRAM. As Lead Agency, SCCWRP
3 shall coordinate all portions of the scope of work described in Exhibit A, oversee
4 work to be completed by the California Department of Fish and Game, who shall look
5 solely to SCCWRP for payment, collect funds from the PARTIES and other funding
6 partners, provide progress reports to the Steering Committee, established by Agreement
7 D99-072, on the work completed and the monies expended, and perform other
8 administrative functions necessary to ensure the completion of the BIOASSESSMENT
PROGRAM. Exhibit A is attached hereto and made a part hereof.

9 Section 4. FUNDING. Exhibit B, describes the cost share allocations for the
10 MUNICIPAL PARTIES for the completion of the BIOASSESSMENT PROGRAM.

11 Section 5. PAYMENT. The MUNICIPAL PARTIES identified in Exhibit B as providing
12 twenty-five thousand dollars (\$25,000) will each make payment of seventeen thousand
13 dollars (\$17,000) of their respective cost share allocation to SCCWRP within sixty
14 (60) days of the approval date of this AGREEMENT. A second and final payment of eight
15 thousand dollars (\$8,000) will be made by those MUNICIPAL PARTIES within sixty (60)
16 days after their receipt of the final report. At the discretion of these MUNICIPAL
17 PARTIES, the second payment may be made in advance of the receipt of the final report.

18 The MUNICIPAL PARTIES identified in Exhibit B as providing seven thousand five
19 hundred dollars (\$7,500) will each make full payment of seven thousand five hundred
20 dollars (\$7,500) of their respective cost share allocation to SCCWRP within sixty (60)
21 days of the approval date of this AGREEMENT.

22 At the completion of the work described in Exhibit A, SCCWRP will provide a
23 final written accounting of expenditures to each of the MUNICIPAL PARTIES for
24 completing the BIOASSESSMENT PROGRAM. If the expenditures are less than the cost share
25 payments made by the MUNICIPAL PARTIES, SCCWRP shall reimburse to each MUNICIPAL PARTY
26 its prorated share of the excess within forty-five (45) days of the final accounting.

1 Section 6. REGULATORY RESPONSIBILITIES AND OBLIGATIONS. It is mutually
2 understood and agreed that, merely by entering into this AGREEMENT, the regulatory
3 responsibilities and obligations of each PARTY are in no manner modified. Any such
4 responsibilities and obligations remain the same, while this AGREEMENT is in force, as
5 they were before this AGREEMENT was made.

6 Section 7. AMENDMENT. This AGREEMENT may be amended upon the written approval of
7 all of the PARTIES. Any amendment to this AGREEMENT must be in writing and fully
8 executed by all PARTIES to be effective.

9 Section 8. LIABILITY. It is mutually understood and agreed that, merely by
10 virtue of entering into this AGREEMENT, each PARTY neither relinquishes liability for
11 its own action nor assumes liability for the actions of other PARTIES. It is the
12 intent of the PARTIES that liability of each PARTY shall remain the same, while this
13 AGREEMENT is in force, as it was before this AGREEMENT was made.

14 Section 9. TERMINATION. Any PARTY wishing to terminate its participation in this
15 AGREEMENT shall provide ninety (90) days prior written notice to all the other PARTIES
16 of its intent to withdraw. Such termination shall be effective ninety (90) days after
17 the notice is received or deemed received ("EFFECTIVE DATE OF TERMINATION"). The
18 terminating PARTY shall continue to be responsible for its share of the financial
19 obligations incurred up to the EFFECTIVE DATE OF TERMINATION as described in Exhibit B
20 to this AGREEMENT. The remaining PARTIES may continue in the performance of the terms
21 and conditions of this AGREEMENT on the basis of a revised allocation of the costs in
22 Exhibit B or may elect to terminate the AGREEMENT.

23 Section 10. AVAILABILITY OF FUNDS. The obligation of each PARTY is subject to
24 the availability of funds appropriated for this purpose, and nothing herein shall be
25 construed as obligating the MUNICIPAL PARTIES to expend money in excess of
26 appropriations authorized by law.

Section 11. NO THIRD PARTY BENEFICIARIES. Nothing expressed or mentioned in this
AGREEMENT is intended or shall be construed to give any person, other than the PARTIES

1 hereto, and any permitted successors, any legal or equitable right, remedy or claim
2 under or in respect of this AGREEMENT or any provisions herein contained. This
3 AGREEMENT and any conditions and provisions hereof is intended to be and is for the
4 sole and exclusive benefit of the PARTIES hereto and the others mentioned above, and
5 for the benefit of no other person.

6 Section 12. REFERENCE TO CALENDAR DAYS. Any reference to the word "day" or
7 "days" herein shall mean calendar day or calendar days, respectively, unless otherwise
8 expressly provided.

9 Section 13. ATTORNEYS FEES. In any action or proceeding brought to enforce or
10 interpret any provision of this AGREEMENT, or where any provision hereof is validly
11 asserted as a defense, each PARTY shall bear its own attorneys' fees and costs.

12 Section 14. ENTIRE AGREEMENT. Except as stated in Agreement D99-072, this
13 AGREEMENT is intended by the PARTIES as a final expression of their agreement and is
14 intended to be a complete and exclusive statement of the agreement and understanding
15 of the PARTIES hereto in respect of the subject matter contained herein. There are no
16 restrictions, promises, warranties or undertakings, other than those set forth or
17 referred to herein. This AGREEMENT supersedes all prior agreements and understandings
18 between the PARTIES with respect to such matter.

19 Section 15. SEVERABILITY. If any part of this AGREEMENT is held, determined or
20 adjudicated to be illegal, void, or unenforceable by a court of competent
21 jurisdiction, the remainder of this AGREEMENT shall be given effect to the fullest
22 extent reasonably possible.

23 Section 16. SUCCESSORS AND ASSIGNS. The terms and provisions of this AGREEMENT
24 shall be binding upon and inure to the benefit of the PARTIES hereto and their
25 successors and assigns.

26 Section 17. NOTICES. All notices required or desired to be given under this
AGREEMENT shall be in writing and (a) delivered personally, or (b) sent by certified

mail, return receipt requested or (c) sent by telefacsimile communication followed by a mailed copy, to the addresses specified below, provided each PARTY may change the address for notices by giving the other PARTIES at least ten (10) days written notice of the new address. Notices shall be deemed received when actually received in the office of the addressee or when delivery is refused, as shown on the receipt of the U.S. Postal service, or other person making the delivery, except that notices sent by telefacsimile communication shall be deemed received on the first business day following delivery.

Director, RDMD
County of Orange
P.O. Box 4048
Santa Ana, CA 92702-4048

Director, Dept of Public Works
County of San Bernardino
825 E. 3rd Street
San Bernardino, CA 92415-0835

Director of Public Works
County of Los Angeles
900 S. Fremont Ave.
Alhambra, CA 91803

Executive Officer
Los Angeles RWQCB
320 W. 4th St., Suite 200
Los Angeles, CA 90013

Asst. Director of Public Works
County of San Diego
9325 Hazard Way
San Diego, CA 92123

Executive Officer
Santa Ana RWQCB
3737 Main St., Suite 500
Riverside, CA 92501

Director
Ventura County W.P. District
800 S. Victoria
Ventura, CA 93009

Executive Officer
San Diego RWQCB
9174 Sky Park Court, Ste 100
San Diego, CA 92123

General Manager-Chief Engineer
Riverside County FC&WCD
1995 Market St.
Riverside, CA 92501

Executive Director
SCCWRP
7171 Fenwick Lane
Westminster, CA 92683

Section 18. OWNERSHIP OF DOCUMENTS. Upon completion of each written task deliverable described in Exhibit A, SCCWRP shall provide each of the PARTIES with a copy of the work product. The PARTIES, individually or jointly, shall not be limited in any way in their use of all data in the work product, including but not limited to reports, files, plans, drawings, specifications, proposals, sketches, diagrams and calculations, provided that any such use not within the purposes of this AGREEMENT shall be at the sole risk of the PARTY making that use.

Section 19. EXECUTION OF AGREEMENT. This AGREEMENT may be executed in counterpart and the signed counterparts shall constitute a single instrument.

IN WITNESS WHEREOF, the PARTIES hereto have executed this AGREEMENT on the dates opposite their respective signatures:

COUNTY OF ORANGE
A political subdivision of the State of
California

Date: _____

By _____
Chairman of the Board of Supervisors

SIGNED AND CERTIFIED THAT A COPY OF
THIS AGREEMENT HAS BEEN DELIVERED TO
THE CHAIRMAN OF THE BOARD

Date: _____

By _____
DARLENE J. BLOOM
Clerk of the Board of Supervisors of
Orange County, California

APPROVED AS TO FORM
COUNTY COUNSEL

By _____
Deputy

Date: _____

COUNTY OF LOS ANGELES
A political subdivision of the State of
California, acting on behalf of the Los Angeles
County Flood Control District

Date: _____

By _____
Chairman of the Board of Supervisors

ATTEST:

Date: _____

By _____

Clerk of the Board of Supervisors of
County of Los Angeles, California

APPROVED AS TO FORM
COUNTY COUNSEL

By _____
Deputy

Date: _____

COUNTY OF SAN DIEGO
A political subdivision of the State of
California

Date: _____

By _____
Director, Purchasing and Contracting

ATTEST:

Date: _____

By _____
Director, Public Works

APPROVED AS TO FORM
COUNTY COUNSEL

By _____
Deputy

Date: _____

VENTURA COUNTY WATERSHED PROTECTION DISTRICT
A body corporate and politic

Date: _____

By _____
Chair of the Board of Supervisors of the
Ventura County Watershed Protection District

ATTEST:

Date: _____

By _____
Clerk of the Board of Supervisors of
Ventura County, California and ex-officio
Clerk of the Board of the Ventura County
Watershed Protection District

APPROVED AS TO FORM
COUNTY COUNSEL

By _____
Deputy

Date: _____

RIVERSIDE COUNTY FLOOD CONTROL AND WATER
CONSERVATION DISTRICT

A body corporate and politic

RECOMMENDED FOR APPROVAL:

WARREN D. WILLIAMS
General Manager-Chief Engineer

APPROVED AS TO FORM:

WILLIAM C. KATZENSTEIN
County Counsel

By _____
JOE S. RANK
Assistant County Counsel

RIVERSIDE COUNTY FLOOD CONTROL AND WATER
CONSERVATION DISTRICT

A body corporate and politic

By _____
JAMES A. VENABLE, Chairman
Riverside County Flood Control and Water
Conservation District Board of Supervisors

ATTEST:

NANCY ROMERO
Clerk of the Board

Date: _____

By _____
Deputy

SAN BERNARDINO COUNTY FLOOD CONTROL DISTRICT
A body corporate and politic

Date: _____

By: _____
DENNIS HANSBERGER,
Chairman, Board of Supervisors
Acting as the Governing Body of the District

SIGNED AND CERTIFIED THAT A COPY OF THIS
DOCUMENT HAS BEEN DELIVERED TO THE CHAIRMAN OF
THE BOARD:

J. RENEE BASTIAN
Clerk of the Board of Supervisors of the County
of San Bernardino

By: _____
Deputy

APPROVED AS TO LEGAL FORM
RONALD D. REITZ
County Counsel

By: _____
CHARLES S. SCOLASTICO
Deputy County Consel

Date: _____

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD, LOS ANGELES REGION

Date: _____

By: _____
Executive Officer

APPROVED AS TO FORM:

Attorney for the Regional Water Quality
Control Board, Los Angeles Region

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD, SANTA ANA REGION

Date: _____

By: _____
Executive Officer

APPROVED AS TO FORM:

Attorney for the Regional Water Quality
Control Board, Santa Ana Region

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD, SAN DIEGO REGION

Date: _____

By: _____
Executive Officer

APPROVED AS TO FORM:

Attorney for the Regional Water Quality
Control Board, San Diego Region

SOUTHERN CALIFORNIA COASTAL WATER RESEARCH PROJECT, a joint powers agency

Date: _____

By: _____
STEPHEN B. WEISBERG
Executive Director